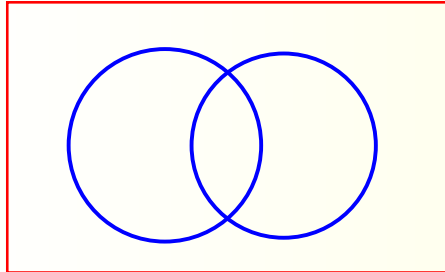


### Warm Up # 9-2

A tennis team has 27 members. 19 have brown hair, 14 have green eyes, and 11 have both brown hair and green eyes.

1. Create a Venn Diagram



2. Find the # of members with:

a) brown hair or green eyes

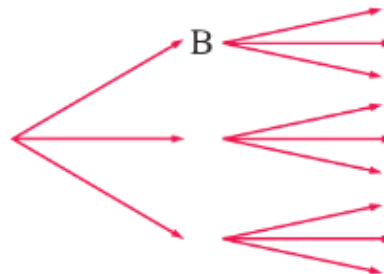
b) brown hair, but not green eyes

HW Questions: p. 277

3 Suppose this spinner is spun twice.



a Copy and complete the branches on the tree diagram shown.



- b Find the probability that black appears on both spins.
- c Find the probability that yellow appears on both spins.
- d Find the probability that different colours appear on the two spins.
- e Find the probability that black appears on either spin.

- 4 The probability of rain tomorrow is estimated to be  $\frac{1}{5}$ . If it does rain, Mudlark will start favourite in the horse race, with probability  $\frac{1}{2}$  of winning. If it is fine, he only has a 1 in 20 chance of winning. Display the sample space of possible results of the horse race on a tree diagram. Hence determine the probability that Mudlark will win tomorrow.

- 6 Jar A contains 2 white and 3 red discs. Jar B contains 3 white and 1 red disc. A jar is chosen at random by the flip of a coin, and one disc is taken at random from it. Determine the probability that the disc is red.

- 7 The English Premier League consists of 20 teams. Tottenham is currently in 8th place on the table. It has 20% chance of winning and 50% chance of losing against any team placed above it. If a team is placed below it, Tottenham has a 50% chance of winning and a 30% chance of losing. Find the probability that Tottenham will draw its next game.

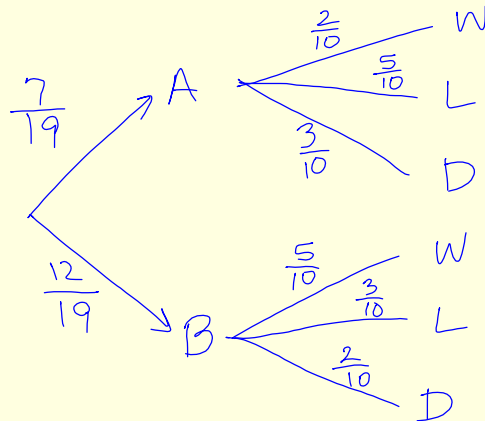
Let  $A = \overset{\text{Team}}{\text{Placed above Tottenham}}$

$B = \overset{\text{Team}}{\text{Placed below}} \quad "$

$W = \text{Tottenham wins}$

$L = \quad " \quad \text{loses}$

$D = \quad " \quad \text{draws}$



$$P(\text{draw}) =$$

$$P(A \cap D) +$$

$$P(B \cap D)$$

$$\frac{7}{19} \cdot \frac{3}{10} + \frac{12}{19} \cdot \frac{2}{10}$$

$$\frac{\quad}{190}$$

### EXERCISE 9F

- 1 Two marbles are drawn in succession from a box containing 2 purple and 5 green marbles. Determine the probability that the two marbles are different colours if:

a the first is replaced

b the first is *not* replaced.

$$P(PG) + P(GP)$$

$$\frac{2}{7} \cdot \frac{5}{7} + \frac{5}{7} \cdot \frac{2}{7}$$

$$\frac{2}{7} \cdot \frac{5}{6} + \frac{5}{7} \cdot \frac{2}{6}$$

2 5 tickets numbered 1, 2, 3, 4, and 5 are placed in a bag. Two tickets are taken from the bag without replacement.

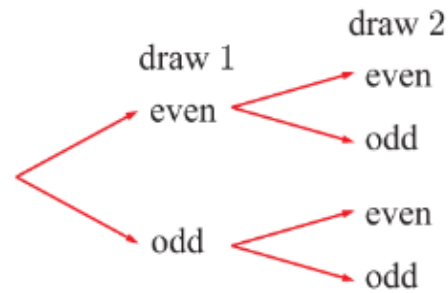
a Complete the tree diagram by writing the probabilities on the branches.

b Determine the probability that:

i both are odd

ii both are even

iii one is odd and the other is even.



## Expectation

What is the probability of rolling a 4?  $\frac{1}{6}$

If we roll 120 times, how many times would we expect to get a 4?

$$\frac{1}{6}(120) = 20$$

$$\left( \begin{array}{c} \text{Expected \#} \\ \text{of successes} \end{array} \right) = \left( \begin{array}{c} \text{Probability} \\ \text{of success} \end{array} \right) \left( \begin{array}{c} \text{Number} \\ \text{of trials} \end{array} \right)$$

$$\text{Exp \#} = pn$$

$$\left( \begin{array}{c} \text{Expected \#} \\ \text{of successes} \end{array} \right) = \left( \begin{array}{c} \text{Probability} \\ \text{of success} \end{array} \right) \left( \begin{array}{c} \text{Number} \\ \text{of trials} \end{array} \right)$$

$$\text{Exp \#} = pn$$

Classwork:

9G.1 p. 282, # 1 - 6 (give units) ↓

$$\begin{aligned} 1. \text{ Expected \# of saves} &= \frac{3}{10}(90) \\ &= 27 \end{aligned}$$

HW: 9F p. 280, # 3 - 8



Next test: Friday, Nov. 3  
Sets, Venn Diagrams and  
Probability

